

Total Knee Replacements with Long Interlocking Stems for Extensive Bone Loss

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Introduction: Difficult total knee replacements occur when extensive bone loss exists, usually with revisions. We hypothesized that long stemmed interlocking prosthesis would provide a successful construct.

Methods: Twenty-one of twenty-four patients with substantial bone loss were available for minimum 2 year follow-up. Demographics: average age, 59; gender, 68% female, average follow-up, 4.2 years. Visual analog scales, retrospective SF-12 and knee society scores measured function. Overall ratings were: good equals ADL with minimal pain, fair if they had moderate pain with ADL, and failed if they had severe pain with ADL or re-operation for stem failure. Post-operative radiographs and complications were studied.

Results: The overall rating was 67% good (14/21), 9% fair (2/21), and 24% failed (5/21). Stem related complications leading to failure were 2 periprosthetic fractures and 1 loose stem. SF-12 scores improved from 27.5 pre-operatively to 51.0 postoperatively ($p < .05$). Visual analog scores showed the following: pain (4-1, where 4=severe to 1=none) decreased from 3.9 to 1.9, ADL (10=excellent to 1=unable to do ADL) increased from 2.8 to 6.8, ability to do sedentary work (10=good to 1=poor) increased from 5.1 to 7.9 Knee society function scores improved from 6.1 to 63.5. X-ray findings showed good ingrowth in 92%, stress shielding in 31%, "spot-welding" at the screws in 41%, and isthmus hypertrophy in 61%.

Discussion: Long-stemmed total knee components with interlocking stems seem to be a reasonable alternative for total knee replacements with extensive bone loss.